

REMARKS

Reconsideration of the above-identified application in view of the foregoing amendments and following remarks is respectfully requested.

A. Status of the Claims and Explanation of Amendments

Claims 1-3 and 12-16 are pending and are rejected. Claims 1-3 and 12, 14-16 are rejected under 35 U.S.C. §112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (5/1/06 Office Action, p. 2). Claims 1, 12 and 13 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,093,370 to Yasuda et al. ("Yasuda et al."). (5/1/06 Office Action, p. 6). Claims 1-3 and 12-16 are also rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 5,587,128 to Wilding et al. ("Wilding et al."). (5/1/06 Office Action, p. 6-7).

By this paper, Applicants have amended claims 1-3 and 16, added claim 17, and respectfully request the cancellation of claims 12-15 without prejudice or disclaimer. Support for these amendments are found throughout the application as originally filed. In particular, support for the amendments to claim 1 are found, for example, in the Specification from page 24, line 2 to page 28, line 2. Support for the amendments to claim 2 are found, for example, in the Specification on page 24, lines 23-27 and page 26, lines 24-27. Claims 3 and 16 are amended to conform to the requirements of 35 U.S.C. §112. Support for these amendments are found, for example, in the Specification on page 22, line 18 to page 23, line 9. Support for claim 17 is found, for example, in the Specification from page 24, line 2 to page 28, line 2 and Figures 4 and 5. No new matter is introduced. Entry is respectfully requested.

B. The Claims are Unambiguously Directed to the Subject Matter of the Applicants' Invention

Applicants respectfully traverse the §112 rejections of claims 1-3, 12 and 14-16 as being allegedly indefinite. Applicants have cancelled claims 12 and 14-15 and amended claims 1-3 and 16 to resolve the office action's concerns. Amongst the §112 concerns raised, the office action indicated that "a composite of these two or more" is indefinite "because one of ordinary skill in the art would not be appraised of the meets and bounds of 'or more'." (5/1/06 Office Action, p. 4). Applicants have amended claims 3 and 16 to expressly state "a composite of metal and resin." This amendment is not made for any substantial reason related to patentability (§§102 or 103), and is asserted to resolve the office action's concern. Accordingly, withdrawal of the §112 rejections is respectfully requested.

C. Claims 1-3 and 16-17 are Patentably Distinct from the Cited References

Applicants respectfully traverse the §102(b) rejections of claims 1-3 and 16-17. As discussed below, Yasuda et al. or Wilding et al. cannot anticipate claims 1-3 and 16-17 because neither reference teach, disclose or suggest all of the limitations of Applicants' amended claim 1.

Claim 1, as amended, recites:

A system for reaction of a nucleic acid comprising:
a reaction unit comprising
a nucleic acid probe array substrate
having a nucleic acid probe immobilized in an array
on the substrate,
a cover member for forming a
chamber with a top surface of said substrate,
wherein a liquid can be filled into the chamber, and
a heat conduction member for
improving thermal diffusion in the liquid within
said chamber, the heat conduction member being in
contact with said substrate or said cover member;

and
a temperature control block for controlling
the temperature of said heat conduction member,
wherein said temperature control block
includes a plurality of holes, and
wherein said heat conduction member
including a leg, the leg is adapted to be inserted into
and in close contact with one of the plurality of
holes of said temperature control block located on a
back surface of said substrate, and the temperature
control block being in contact with said substrate or
said cover member.

Applicants' claim 1 recites a system for reaction of a nucleic acid characterized by controlling the temperature of a reaction unit using a temperature control block having a plurality of holes wherein a leg of a heat conduction member is adapted to be inserted into and in close contact with one of the plurality of holes. The system as recited by Applicants' claim 1 places the heat conduction member of the reaction unit in close contact with the temperature control block and thus, providing a more precise control of the temperature of the reaction unit. In addition, for example, a conventional heat block for microtubes (e.g., CHT-100; manufactured by Iwaki Glass Company Limited) may be utilized, and as a result, a system having lower costs may be obtained. (Specification, page 36, lines 1-2). Further, Applicant's system for reaction of a nucleic acid may be utilized in combination with microtubes using the same heat block.

Yasuda et al. is directed to a polynucleotide separation method and apparatus therefor. Contrary to Applicants' invention, Yasuda et al. discloses a substrate, a temperature control unit and an electrically conductive film arranged in a layered planar arrangement where the electrically conductive film is the top layer and the substrate is at the bottom, and does not contemplate a temperature control block having a plurality of holes wherein a leg of a heat

conduction member is adapted to be inserted into and in close contact with one of the plurality of holes. (Yasuda et al. col. 11, lines 43-62; Figure 11).

Wilding et al. is directed to mesoscale polynucleotide amplification devices. Wilding et al. discloses a heating means (53) and a temperature control means (57). However, Wilding et al. does not teach or suggest a temperature control block for a temperature control block for controlling the temperature of a heat conduction member of a reaction unit, wherein said temperature control block includes a plurality of holes.

For at least the reasons stated above, Applicants respectfully submit that claim 1 is patentable over Yasuda et al. and Wilding et al. and respectfully request the §102(b) rejections be withdrawn. For at least similar reasons stated above, dependent claims 2-3 and 16-17 are believed to be patentably distinct as well.

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CONCLUSION

For the above-stated reasons, this application is respectfully asserted to be in condition for allowance. An early and favorable examination on the merits is requested. In the event that a telephone conference would facilitate the examination of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

THE COMMISSIONER IS HEREBY AUTHORIZED TO CHARGE ANY ADDITIONAL FEES WHICH MAY BE REQUIRED FOR THE TIMELY CONSIDERATION OF THIS AMENDMENT UNDER 37 C.F.R. §§ 1.16 AND 1.17, OR CREDIT ANY OVERPAYMENT TO DEPOSIT ACCOUNT NO. 13-4500, ORDER NO. 1232-5069.

Respectfully submitted,
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